



Developing Environmental Indicators Through State, County and Municipal Partnerships

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A map of New Jersey and its surrounding regions, including parts of New York, Pennsylvania, Delaware, and Virginia. The map shows major cities like New York, Newark, Jersey City, Trenton, Camden, and Atlantic City. It also displays geographical features like the Atlantic Ocean, Delaware Bay, and various rivers. A scale bar in miles and kilometers is visible in the top left. The map is overlaid with a grid of latitude and longitude lines.

New Jersey Center for Environmental Indicators (NJCEI)

Funded by:

EOHSI

NJDEP (DSRT and CEHA)

NJAES



NJCEI Purpose

- Main purpose is to work with **practitioners** and **scientists** from **academic institutions**, **governmental** and **non-governmental** research programs and from NJDEP to develop and use the most applicable environmental indicators to inform scientifically sound decision-making.

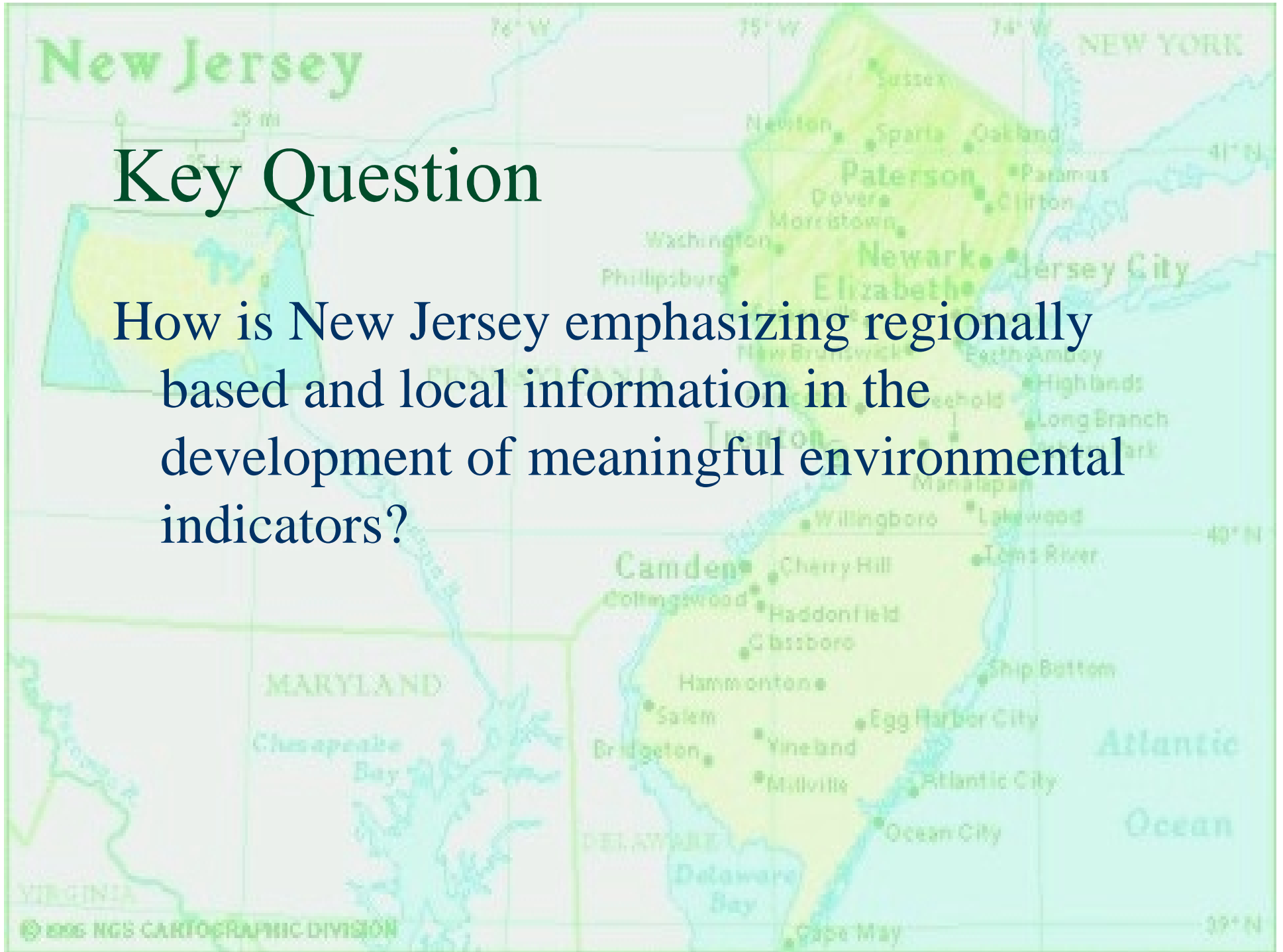
Areas such as: Air, Communication, Mercury, Ecosystems etc.

Investigation of Establishing as Indicator Linking Respiratory Health and Air Pollution Data (1997)

County and Community Environmental Indicators (1998-2000)

Key Question

How is New Jersey emphasizing regionally based and local information in the development of meaningful environmental indicators?



A map of New Jersey and surrounding areas, including parts of New York, Delaware, and Virginia. The map shows major cities like New York, Newark, Jersey City, Trenton, Camden, and Atlantic City. It also shows the Atlantic Ocean and Delaware Bay. A scale bar indicates 0 to 25 miles. The map is titled 'New Jersey' in large green letters at the top left. The text '© 1995 NGS CARTOGRAPHIC DIVISION' is at the bottom left.

The Survey:

Developing Environmental Indicators Through State, County and Municipal Partnerships

- Introduction/Rationale
- Key Research Questions
- Project Objectives
- Project Methods
- Results
- Implications
 - Example Frameworks for Developing Indicators Based on Research

A map of New Jersey and surrounding areas, including parts of New York, Pennsylvania, Delaware, and Virginia. The map shows major cities like New York, Newark, Jersey City, Trenton, and Philadelphia. It also includes latitude and longitude lines, a scale bar, and an inset map of the United States. The text 'New Jersey' is prominently displayed in the top left. The map is credited to '© 1995 NGS CARTOGRAPHIC DIVISION' in the bottom left.

Introduction/Rationale

- Design Principles for Effective Performance Measurement Systems
 1. Data reliability/availability
 2. Issue relevance and usefulness
 3. Also other criteria- accountability (within environmental agencies) – ability to institutionalize or operationalize.

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Introduction/Rationale (cont'd)

- NJ DEP in consultation with scientists and members of the public, developed more than 140 indicators for environmental quality
- Two mechanism, the County Indicators Working Group
- County Environmental Health Agency

A map of New Jersey and surrounding areas, including parts of New York, Pennsylvania, Delaware, and Virginia. The map shows major cities like New York, Newark, Jersey City, Trenton, and Philadelphia. It also displays state boundaries, major rivers, and the Atlantic Ocean. A scale bar indicates 25 miles. The map is titled 'New Jersey' in the top left corner. The text '© 2005 NGS CARTOGRAPHIC DIVISION' is visible in the bottom left corner.

Key Research Questions:

- What environmental data have counties collected?
- What environmental goals and issues have been identified in counties?
- What is required to create partnerships between counties and the state toward developing environmental indicators?

A map of New Jersey and surrounding regions, including parts of New York, Pennsylvania, Delaware, Maryland, and Virginia. The map shows major cities like Newark, Jersey City, Trenton, and Philadelphia, as well as geographical features like the Atlantic Ocean and Delaware Bay. A scale bar indicates 25 miles. The map is overlaid with a grid showing latitude and longitude coordinates.

Project Objectives

- Determine resources (funding, staff..) that exist in counties
- Determine gaps in capacity and resources
- Catalogue environmental data collected
- Determine county priorities and areas of interest
- Recommend mechanisms for state-county partnerships

A map of New Jersey and surrounding areas, including parts of New York, Delaware, and Virginia. The map shows major cities like New York City, Philadelphia, and Atlantic City, as well as the Delaware Bay and Atlantic Ocean. The text 'New Jersey' is prominently displayed in the top left. The map is overlaid with a grid of latitude and longitude lines.

Project Methods

- Questionnaire developed in consultation with working group representatives from CEHA, Watershed, Green Acres, Water, Science, Research & Technology, GIS, Environmental Planning and Science and a representative from the Office of State Planning
- Pretested survey with 2 Counties - Hudson and Burlington
- Validated results
- Case study with Municipality of Bayonne (a heavily urbanized municipality in Hudson County)

New Jersey

Results

- County Capacity Profiles
 - Four examples: Environmental Priorities, County Planning, Data Collected and GIS Capacity
- Key Challenges
- Additional Resources Required by Counties
- Needs to realize partnerships
- Specific Indicators





County Capacity Profiles

- 21 Profiles include:
 - Top environmental priorities identified by counties
 - Status of county planning processes
 - GIS capacity
 - Indicators
 - Challenges
 - Resource and Capacity Needs

A map of New Jersey and surrounding areas, including parts of New York, Delaware, and Virginia. The map shows major cities like New York City, Philadelphia, and Washington D.C., as well as various towns in New Jersey. The Atlantic Ocean is visible to the east. The map is overlaid with a grid of latitude and longitude lines.

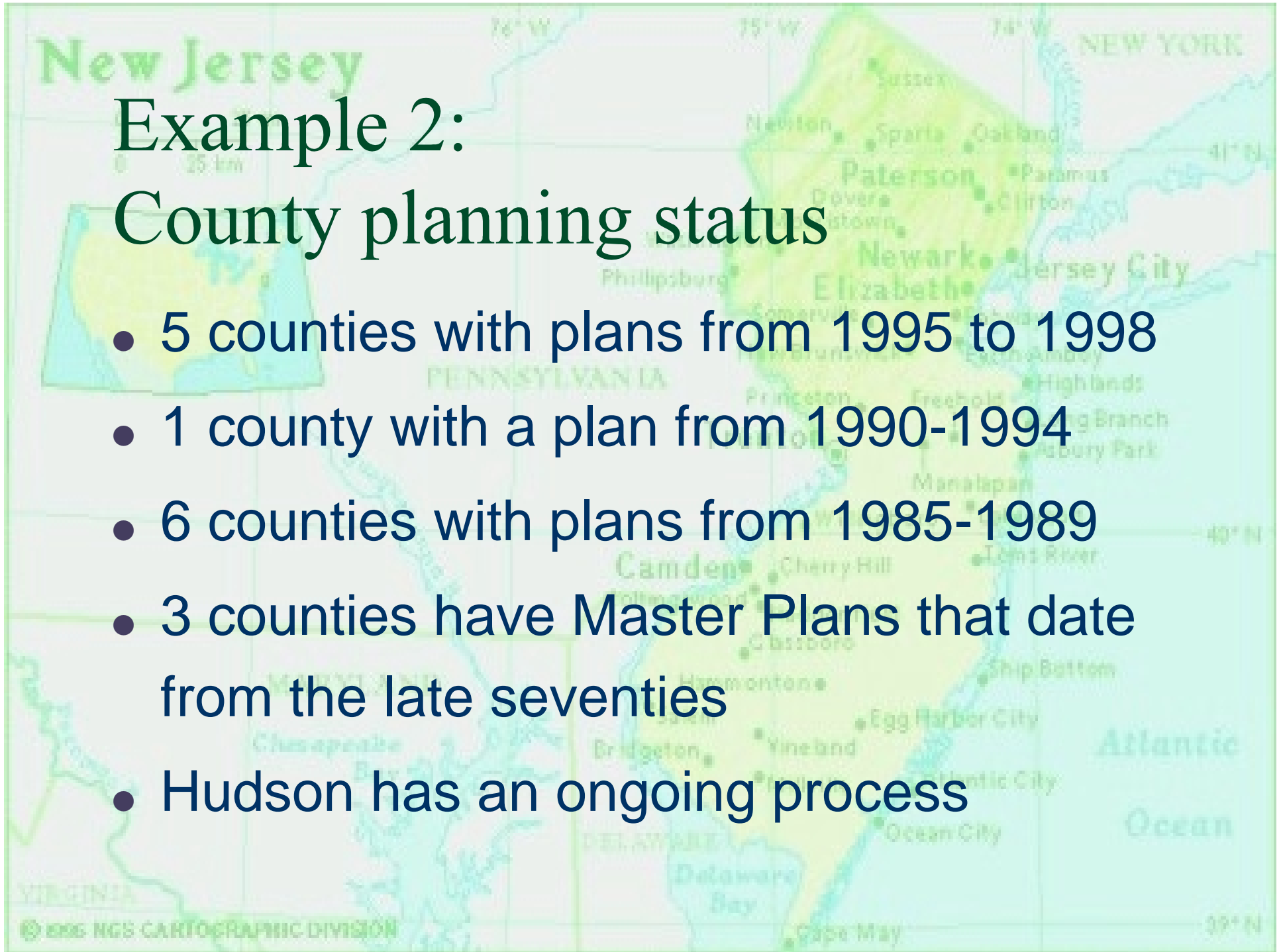
Example 1: Top environmental priorities

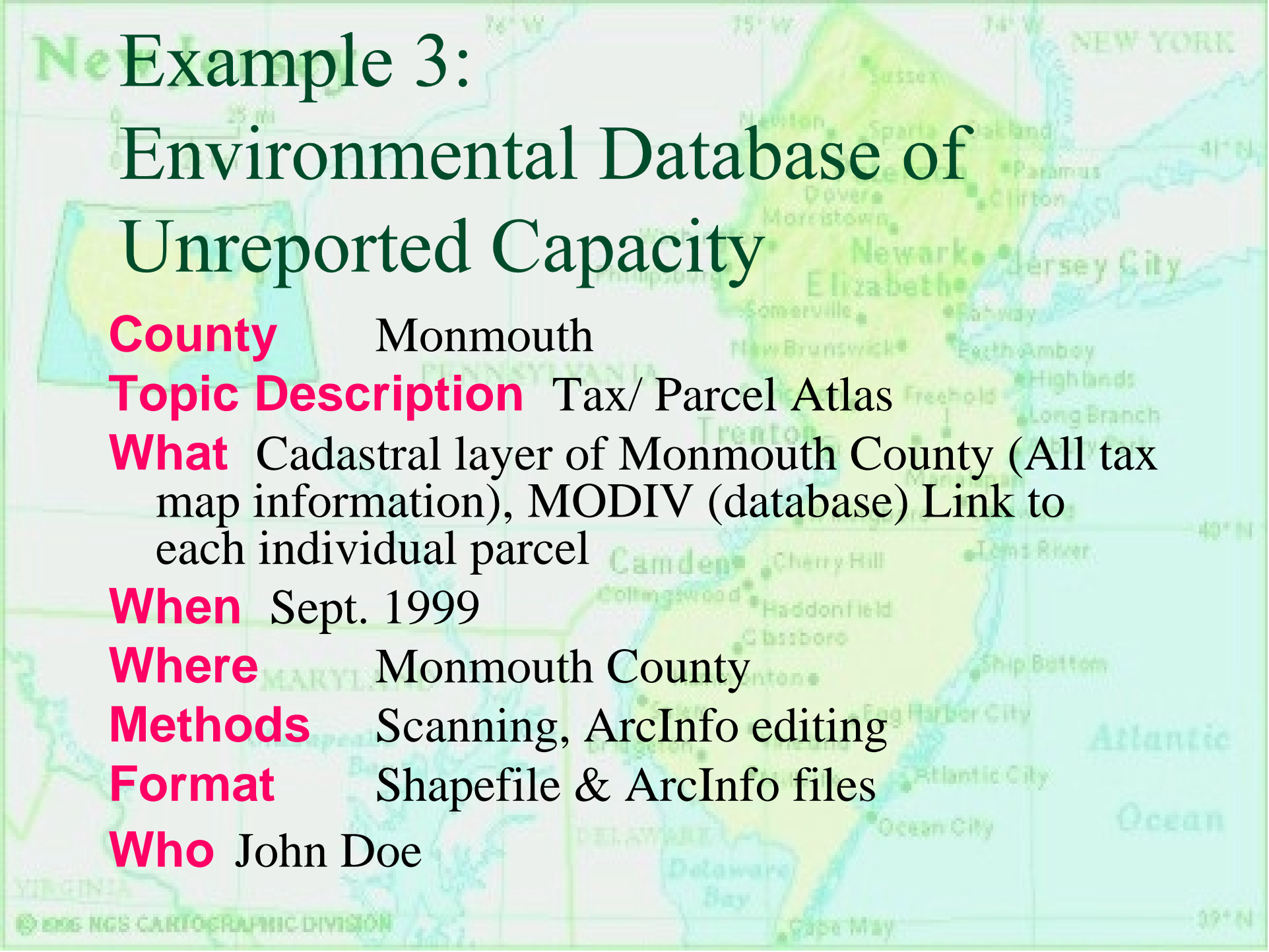
- Range of responses
- Themes common across counties (regional issues):
 - Open space 65%
 - Water quality and watershed management 40%
 - Continued economic development, solid waste management, and air pollution

Example 2:

County planning status

- 5 counties with plans from 1995 to 1998
- 1 county with a plan from 1990-1994
- 6 counties with plans from 1985-1989
- 3 counties have Master Plans that date from the late seventies
- Hudson has an ongoing process





Example 3: Environmental Database of Unreported Capacity

County Monmouth

Topic Description Tax/ Parcel Atlas

What Cadastral layer of Monmouth County (All tax map information), MODIV (database) Link to each individual parcel

When Sept. 1999

Where Monmouth County

Methods Scanning, ArcInfo editing

Format Shapefile & ArcInfo files

Who John Doe

A map of New Jersey and surrounding areas, including parts of New York, Delaware, and Virginia. The map shows major cities like Newark, Jersey City, and Paterson, as well as the Atlantic Ocean and Delaware Bay. The text 'New Jersey' is prominently displayed in the top left. The map is overlaid with a grid showing latitude and longitude coordinates.

Example 4: GIS Capacity

- Most counties have the capacity for both ARCVIEW and ARCINFO
- GIS capacity funded through a range of sources from county tax, CEHA, Engineering bonds, etc.
- GIS is identified as an important tool for management, but underutilized due to lack of training and lack of access to State datasets

A map of New Jersey and surrounding areas, including parts of New York, Pennsylvania, Delaware, and Virginia. The map shows major cities like New York, Newark, Jersey City, and Philadelphia. It also displays the Atlantic Ocean and various rivers. The map is overlaid with a grid of latitude and longitude lines.

Key Challenges for Indicator Development

- Geographic variability
- Multiple and overlapping objectives
- Parallel processes in watershed and planning programs
- Lack of coordination between different levels of government
- Coordination and management of data

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Additional resources required by counties

- Staff to maintain databases and data management systems
- Stable funding
- Training courses for data management
- GIS technology and equipment upgrade
- Data access-timely and coordinated

A map of New Jersey and its surrounding regions, including parts of New York, Pennsylvania, Delaware, and Virginia. The map shows major cities like Newark, Jersey City, and Philadelphia, as well as geographical features like the Atlantic Ocean and Delaware Bay. An inset map in the top left shows the location of New Jersey within the United States. The text 'Needs to Realize Partnerships' is overlaid on the map in a large, bold, green font.

Needs to Realize Partnerships

- Strengthen role of CEHA (or other existing State infrastructure)
- Minimize conflicting and overlapping permit requirements
- Link indicators initiatives

A map of New Jersey and surrounding areas, including parts of New York, Delaware, and Virginia. The map shows major cities like New York, Newark, Jersey City, and Philadelphia. It also shows the Atlantic Ocean, Delaware Bay, and Chesapeake Bay. The map is overlaid with a grid of latitude and longitude lines. The title 'Specific Environmental Indicators' is prominently displayed in the upper left quadrant of the map.

Specific Environmental Indicators

- Key areas are water quality and air quality
- Solid waste, shellfish beds, vehicle traffic, recycling, ground water, asthma attacks and vegetation in streams and bays
- Each county proposed a lists of Indicators (excepting those that did not respond to this question)

A map of New Jersey and New York, showing major cities and geographical features. The map is oriented with New Jersey on the left and New York on the right. Major cities like New York City, Newark, Jersey City, and Trenton are labeled. The Atlantic Ocean is visible on the right side. The map includes latitude and longitude lines and a scale bar in the top left corner.

Specific Environmental Indicators-Hudson

- Water quality (surface water monitoring)
- Air quality (supplement existing air quality monitoring stations)
- Recreational use of waterways
- Brownfield revitalization
- Data already collected: solid waste, parks and rec, planning/land use, road infrastructure, water quality fecal coliform and storm sewer outfalls, lead exposure

A map of New Jersey and surrounding areas, including parts of New York, Pennsylvania, Delaware, Maryland, and Virginia. The map shows major cities, rivers, and the Atlantic Ocean. The title 'City of Bayonne Environmental Goals' is overlaid on the map.

City of Bayonne Environmental Goals

Water Quality Issues

- * Combined sewer overflows
- * Solids/Floatables

Open space Preservation and Recreation

- * Parks
- * Hudson River Walkway
- * Coastal and Freshwater Wetlands
- * Status of Endangered and Threatened Wildlife

Brownfields

Environmental Education

- * Watershed Education/Urban Fishing Program

Scope of New Jersey NEPPS Program

Pilot (1995-1996)



Current (1997-1998)



Proposed (1999-2000)



Air
Freshwater
Drinking Water
Pollution Prevention
Mercury
Compliance/Enforcement
Marine Water
Ground Water
Solid/Hazardous Waste
Site Remediation
Pesticides
Radiation (partial components)
Land & Natural Resources
Global Climate Change
Sustainability
Radiation (additional components)
Water Supply
Environmental Equity
Open & Effective Government



State

Air

Freshwater

Drinking Water

Pollution Prevention

Mercury

Compliance/Enforcement

Marine Water

Ground Water

Solid/Hazardous Waste

Site Remediation

Pesticides

Radiation (partial components)

Hudson County

Water quality (surface water monitoring)

Air quality (supplement existing air quality monitoring stations)

Recreational use of waterways

Brownfield revitalization

solid waste,
parks and rec,
planning/land use,
road infrastructure,
lead exposure

Municipality of Bayonne

Water Quality Issues

Combined sewer overflows

Solids/Floatables

Open space Preservation and Recreation

Parks

Hudson River Walkway

Coastal and Freshwater Wetlands

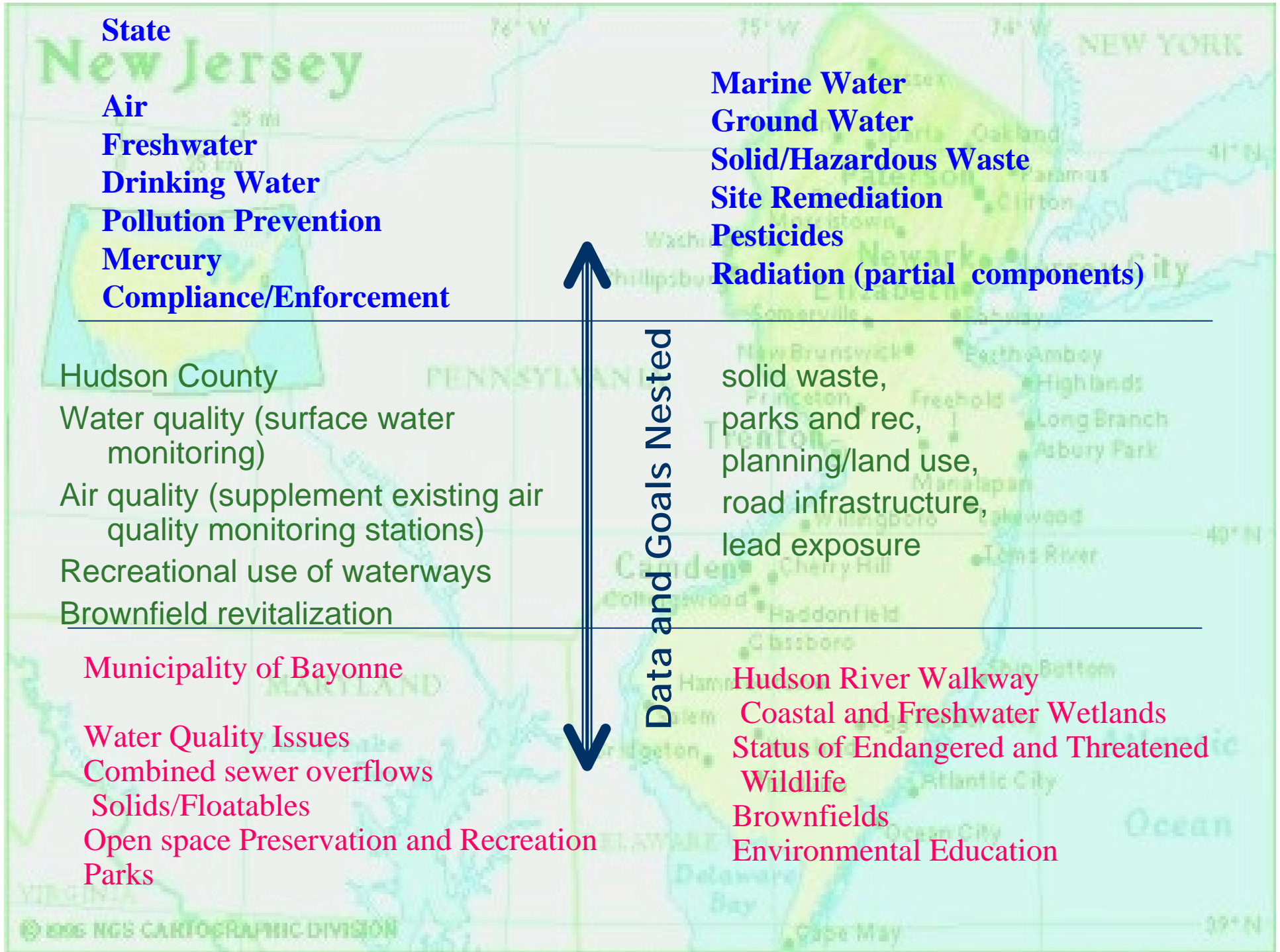
Status of Endangered and Threatened

Wildlife

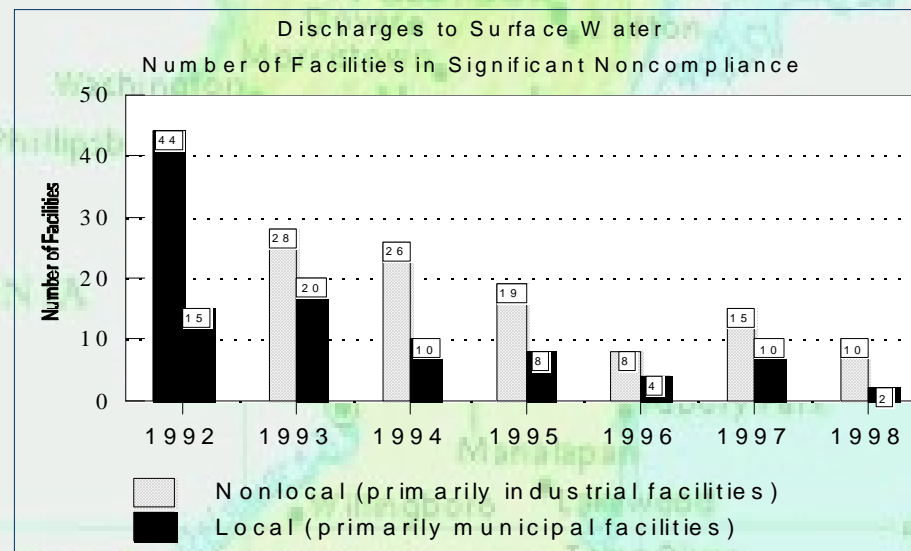
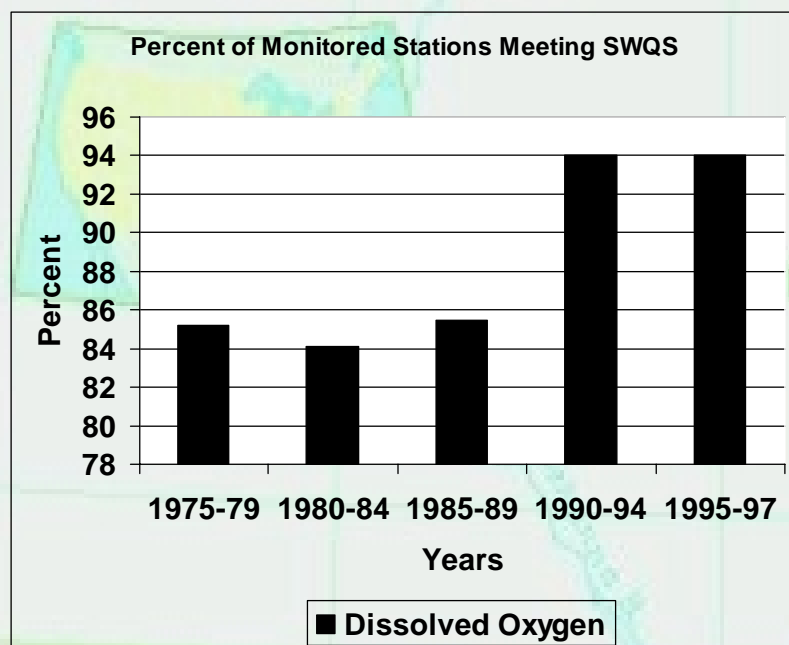
Brownfields

Environmental Education

Data and Goals Nested



Potential Causes/Sources of Benthic Impairment



Other Potential Causes:

Sediment quality

Flow Alteration

Land use/Land cover changes

Other water contaminants

Habitat degradation



Co-operative Management

The background is a map of New Jersey and New York. A flow diagram is overlaid on the map. At the top, the text 'Co-operative Management' is in a large, bold, dark green font. Below it, a horizontal line with an arrow pointing right is labeled 'Priority Setting, Data from state programs, standards and training'. This line leads to a box on the right containing the text 'County/Municipality coordinated data monitoring'. From the bottom of this box, a horizontal line with an arrow pointing left leads to a box on the left containing the text 'State coordinated Data management and analysis'. Below this box, a horizontal line with an arrow pointing left is labeled 'Municipal and county priorities and data'.

Priority Setting, Data from state programs, standards and training

State coordinated
Data management
and analysis

County/Municipality
coordinated data
monitoring

Municipal and county priorities and data

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Conclusions/Challenges

- ◆ **Data quality**
- ◆ **Data availability**
- ◆ **Data representativeness**
- ◆ **Alignment between measures & goals**
 - ◆ **Significance beyond that directly associated with a parameter value**

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Conclusions/Challenges (Cont'd)

- ◆ **Need to integrate county and municipality goals and indicators into state systems**
- ◆ **Address need for adequate resources for monitoring, assessment and information management in a systematic way**

A map of New Jersey and surrounding areas, including New York, Pennsylvania, Delaware, and Maryland. The map shows major cities like New York City, Newark, Jersey City, Trenton, and Philadelphia. It also shows the Atlantic Ocean and the Delaware Bay. The map is overlaid with a grid of latitude and longitude lines.

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**Full report available from New Jersey
Department of Environmental
Protection, DSRT**